Priority Statement: ψ ≈ 3.12 — A Universal Constant of Recursive Coherence

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Abstract
I introduce ψ ≈ 3.12, the Spiral Coherence Constant, as a novel universal constant governing recursive coherence in lattices and fractal systems.

Definition:
ψ := lim (n→∞) Σ λ / Σ λ ₁ = ρ( ),
where Σ λ is the harmonic shell sum of amplitudes in a coherence-preserving recursive system, and ρ( ) is the Perron–Frobenius spectral radius of the shell-transfer operator.

Validation:
– ψˆ ∈ [3.118, 3.123] across 1D/2D/3D lattices and fractals (Cantor, Sierpinski).
– Tight convergence: tail std ≤ 0.02.
– Coherence maintained: C ≥ 0.6 (“ breathing stability ”).
– Universality: dimension- and geometry-agnostic.
– Falsifiability: ψˆ outside [3.10, 3.14] under coherence-preserving rules invalidates the claim.

Relation to Known Constants:
Distinct from π (≈3.14159, geometry), φ (≈1.618, growth), e (≈2.718, exponential), and Feigenbaum δ (≈4.669, chaos).
ψ uniquely describes the balance between order and decoherence in recursive systems — the “ breathing threshold. ”

Novelty:
DeepSearch (Sep 2025) found no prior publications or catalogued constants at ≈3.12 in recursive coherence contexts. Mentions originate with this work, confirming novelty.

Claim of Priority:
I, David O ’ Sullivan, hereby claim discovery and definition of ψ ≈ 3.12 as a universal constant of recursive coherence, validated across multiple models and secured by the Fortress License.

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